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Enhancing the reliability of performance measures in empirical based research: leverage ratios and theoretical based research

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ABSTRACT

As well as incorporating and exploring the role of formal analytical methods as a means of highlighting and discovering foundational and fundamental strategy issues, such as the determinants/causes of performance differences between banking institutions and other corporate structures across various jurisdictions, this paper aims to contribute to the literature on how limitations of empirical based research can be mitigated.

Such causes of performance differences will incorporate a consideration of what these determinants are, how they operate, how performance should be measured, the extent to which such differences persist, the extent to which such performance measures should be relied upon. Performance measures to be incorporated in this paper will focus primarily on firm performance measures, such as leverage ratios, as well as a brief discussion of macro-economic indicators. From this perspective, the rise of macroeconomics, micro economic inefficiency debates - as well as the validity of such debates will be considered.

In its aim to accentuate why many doubts have arisen as regards the reliability of the Basel III Leverage Ratio as a performance measure, and principally in respect of calibration issues, this paper will also provide an analysis of the recent updates which have taken place in respect of the Basel III Leverage Ratio and the Basel III Supplementary Leverage Ratio – both in respect of recent amendments introduced by the Basel Committee and proposals introduced in several jurisdictions such as the United Kingdom and the United States.

The paper will also aim to highlight the role of enforcement and the enforceability of rules, ratios and standards, in ensuring that more comparable, consistent, objective and ultimately reliable performance measures are generated.

Basel III, Capital Requirements Directive IV, leverage ratios, enforcement, supervision, Binding Technical Standards, Keynesian revolution, macroeconomics, micro economic inefficiency

Enhancing the Reliability of Performance Measures in Empirical Based Research: Leverage Ratios and Theoretical Based Research

Marianne Ojo¹

A. Introduction

How Does the Enforceability of Rules Enhance the Reliability of Performance Measures?

According to the European Banking Authority (EBA), “the overarching goal of the Basel III agreement and its implementing Act, the CRD IV package, is:²

- to strengthen the resilience of the EU banking sector so that it would be better placed to absorb economic shocks whilst ensuring that banks continue to finance economic activity and growth.”

The CRD IV package, which was introduced in 2013, replaces the Directives 2006/48 and 2006/49, with a Directive and Regulation.³ The CRD IV entered into force on 1 January 2014 - with some phasing in arrangements taking place between 2014 and 2019.

The first consultative paper on a new capital adequacy framework, which was issued by the Basel Committee on Banking Supervision, introduced the „three pillar“ model which encompasses the minimum capital requirements, supervisory review and market discipline - „as a lever to strengthen disclosure and encourage safe and sound banking practices.“⁴ As well as the criticism related to the fact that it rewarded risk lending, the fact that „capital requirements were just reasonably related to banks’ risk taking activities and that the credit exposure requirement was the same regardless of the credit rating of the borrower,⁵ a general criticism of Basel I relates to the fact that it promoted capital arbitrage. Such capital arbitrage being attributed to its wide risk categories which provided banks with the liberty to „arbitrage between their economic assessment of risk and the regulatory capital requirements.”⁶

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² European Banking Authority, Implementing Basel III Europe: CRD IV Package
<http://www.eba.europa.eu/regulation-and-policy/implementing-basel-iii-europe>

³ “The Regulation, the CRR, contains detailed prudential requirements for credit institutions and investment firms whilst the new Directive covers areas of the current Capital Requirements Directive where EU provisions need to be transposed by Member States in a way suitable to their respective environment.” see *ibid*

⁴ Basel Committee on Banking Supervision, 'Consultative Paper on a New Capital Adequacy Framework' 3rd June 1999
<http://www.bis.org/press/p990603.htm>

⁵ See M Saidenberg and T Schuermann, 'The New Basel Capital Accord and Questions for Research' (2003) Wharton Financial Institutions Center Working Paper 2003 at page 4

⁶ Basel Committee on Banking Supervision, 'Capital Requirements and Bank Behaviour: The Impact of the Basel Accord'

„Regulatory capital arbitrage“, a practice which involves banks „using securitisation to alter the profile of their book“ usually produces the effect of making bank's capital ratios appear inflated.⁷ Four identified types of capital arbitrage are:⁸ cherry picking, securitisation with partial recourse, remote origination and indirect credit.

The Second Consultative Paper, issued by the Basel Committee in January 2001, introduced the two Internal Ratings Based (IRB) methodologies – the Foundational IRB and the Advanced IRB methodologies. The Internal Ratings Based approach to capital requirements for credit risk, not only relies significantly on the internal assessment carried out by a bank, in relation to counterparties and exposures, but is also geared towards the achievement of two primary goals, namely:⁹ „additional risk sensitivity“ and „incentive compatibility“.

Basel 2 is premised on a three level approach which permits banks to select from three models, namely: the basic standardized model, the IRB foundation approach and the advanced ratings approach. According to the Consultative Document on Standard Approach to Credit Risk,¹⁰ capital requirements under the standardized approach are considered to be more synchronised and in harmony with the principal elements of banking risk – owing to the introduction of more differentiated risk weights and a broader recognition of techniques which are applied in mitigating risk whilst such techniques attempt to avoid undue complexity. As a result, capital ratios generated through the standardized approach, should adapt more to present and actual risks encountered by banks, than was the case previously.

Under Pillar One minimum capital requirements, operational risk is to be corroborated by capital. Measurement approaches for operational risk can be found in the Capital Requirements Directive (CRD) and there are three broad approaches to the capital assessment of operational risk which are as follows:

- Basic Indicator Approaches
- Standardized Approaches
- Internal Measurement Approach

The developments and evolution across the Basel Capital Accords have illustrated their focus to address prevailing financial risks at the time, their focus on the regulation of complex financial instruments such as hedge funds, the pro cyclical nature of risks and the need to mitigate occurrences related to regulatory capital arbitrage. The era of Basel III has also witnessed the introduction of liquidity standards – these being the first of their kind, However the need to address off balance sheet instruments, complex derivative products,

Basel Committee on Banking Supervision Working Papers April 1999 at page 21

⁷ See *ibid*; Bank's capital ratio may appear inflated „relative to the riskiness of the remaining exposure“ see *ibid*

⁸ *Ibid* at pages 22-24

⁹ In establishing an Internal Ratings Based approach, the Committee's intention was directed at „fine tuning capital requirements with a greater degree of accuracy to the level of a bank's exposure to credit risks.“ Basel Committee on Banking Supervision, 'The Internal Ratings Based Approach' Supporting Document to the New Basel Capital Accord 2001 at pages 1 and 3 <http://www.bis.org/publ/bcbsca05.pdf>

¹⁰ Basel Committee on Banking Supervision, Consultative Document, Standard Approach to Credit Risk, Supporting Document to the New Basel Accord January 2001 at page 1 <http://www.bis.org/publ/bcbsca04.pdf>

exposures of various kinds – and particularly those exposures relating to derivatives, off balance sheet and leverage, as well as those risks attributed to non-bank institutions, continually constitute a vital focal point.

The Capital Requirements Directive (CRD) IV, which constitutes the Capital Requirements Regulation (CRR), as well as the Capital Requirements Directive (CRD), is aimed at implementing Basel III in the European Union. Consequently, this CRD package, replaces Directives 2006/48 and 2006/49 with a Regulation and a Directive. The significance of such a move not only highlights the awareness of the importance of ensuring that Basel rules and regulations become more binding and enforceable, but also signals an era whereby the use of enforcement and supervisory tools such as Binding Technical Standards (BTS) are being introduced and generated by the European Banking Authority, as it plays a crucial role in the implementation of Basel III in the EU.

Another significance of such a move towards Basel rules and regulations becoming more enforceable and binding lies in the facilitation of greater consistency, convergence and compliance, which the introduction of a Regulation, Binding Technical Standards, as well as other reporting requirements and provisions would generate in the implementation process. The increased relevance of Basel rules, and particularly Basel III rules, as well as their significance for the Eurozone, European Union institutions and European banks is hereby emphasised.

This paper is structured as follows: As well as highlighting the relationship between Basel III and the Capital Requirements Directive IV, section B, the literature review section, proposes a means of mitigating the gaps which exist in the current and previous literature on the topic of leverage ratios. Further, section C consolidates on the importance of incorporating the conceptual and theoretical based frameworks, theories, and particularly micro economic theories in the design and methodology of empirical based research.

Efforts aimed at improving the performance measure attributes of the leverage ratio will be analysed under section C. This will be facilitated through a consideration of the progress and initiatives aimed at reducing the potential for regulatory capital arbitrage practices, as well as further more vital reasons attributable to the need for enhanced supplementary leverage ratios, namely, the need for adequate calibration between the risk based capital framework and the leverage ratio framework, as well as the need to avoid scenarios which could result in the undercapitalisation of banking institutions.

As well as emphasising the all-important need to achieve a balance between the need for consistency, comparability and improved harmonisation whilst ensuring that simplicity and a „one size fits all“ approach does not promote a situation whereby credible and accurate results are neglected at the expense of achieving a standardized approach, the concluding section enlightens on how the leverage ratio, as a performance measure, should be approached - having due considerations to the need for calibration with the risk based capital adequacy framework, as well as the incorporation of thorough and frequent disclosure practices.

B Literature Review

Accounting For the Gaps in the Literature on Leverage Ratios

Since leverage ratios constitute the focal point of this study and given the fact that insufficient data is available and also the fact that less empirical evidence exists to bolster various related claims - since the Basel leverage ratio was only just recently introduced in 2010, in comparison to the capital adequacy framework, the conceptual and theoretical frameworks will constitute the dominant features in this aspect of the study.

As well as lessons drawn from the most recent financial crisis, namely, how quickly a capital crisis could transform into a liquidity crises, the need for leverage ratios also came to light:

- An underlying feature of the financial crisis was the build-up of excessive on- and off-balance sheet leverage in the banking system. In many cases, banks built up excessive leverage while maintaining strong risk-based capital ratios. At the height of the crisis, the market forced the banking sector to reduce its leverage in a manner that amplified downward pressure on asset prices. This deleveraging process exacerbated the feedback loop between losses, falling bank capital, and shrinking credit availability.¹¹

The Basel III reforms introduced a „simple, transparent, non-risk based leverage ratio which is intended to serve – not only as a „credible supplementary measure to the risk-based capital requirements“ but also:¹²

- restrict the build-up of leverage in the banking sector to avoid destabilising deleveraging processes that can damage the broader financial system and the economy; and
- reinforce the risk-based requirements with a simple, non-risk-based “backstop” measure.

Furthermore, the Basel Committee is of the view that:¹³

- a simple leverage ratio framework is critical and complementary to the risk-based capital framework; and
- a credible leverage ratio is one that ensures broad and adequate capture of both the on- and off-balance sheet leverage of banks.

The importance of liquidity risks, which also contributed to the devastating effects of the recent Financial Crisis, also resulted in the introduction of two liquidity standards, namely, the Liquidity Coverage Ratio (LCR), and the Net Stable Funding Ratio (NSFR).

The definition of liquidity, as provided by the Bank of International Settlements (BIS), is “the ability of a bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses. The fundamental role of banks in the maturity transformation of short-term deposits into long-term loans makes

¹¹ Basel Committee on Banking Supervision, Consultative Document Revised Basel III Leverage Ratio Framework and Disclosure Requirements June 2013 at page 4 of 22 <http://www.bis.org/publ/bcbs251.pdf>

¹² *ibid*

¹³ *ibid*

banks inherently vulnerable to liquidity risk, both of an institution-specific nature and that which affects markets as a whole.”¹⁴

A liquidity crisis is considered to be „the classic type of banking crisis whereby a bank for some reason, cannot meet all its payment obligations.“¹⁵ The role played by imperfect knowledge in triggering such a crisis is further elaborated. In this sense, bank runs are triggered as a result of such „imperfect knowledge which customers have of their banks, and the links through the interbank market and payment system.“¹⁶ Such role played by imperfect knowledge or information asymmetries in triggering such crises could also be extended to enterprises, firms and organisations - and not just banking organisations.

Whilst the Liquidity Coverage Ratio (LCR)'s objective is aimed at „promoting the short-term resilience of the liquidity risk profile of banks by ensuring that banks have an adequate stock of unencumbered high quality assets (HQLA) that can be converted easily and immediately into cash“ to meet the liquidity needs of private markets for a 30 calendar day liquidity stress scenario, the Net Stable Funding Ratio (NSFR) is targeted at medium to longer term funding activities of banking institutions. By the very nature of the definition of these liquidity standards, the first to be introduced under Basel III, it is not difficult to comprehend why the Liquidity Coverage Ratio constitutes the more crucial standard.

The NSFR serves as a complementary standard to the LCR in serving to „limit over-reliance on short-term wholesale funding during times of buoyant market liquidity and encourage better assessment of liquidity risk across all on- and off-balance sheet items“ as well as a „minimum enforcement mechanism.“

As is the case with the two liquidity standards which are intended to serve as complementary measures to the risk-based capital adequacy framework, the Basel III Leverage Ratio was established by the Basel Committee as a non-risk based measure which is intended to serve as a supplement to the Basel risk based capital framework. The merits of the Leverage Ratio as a supplement to the risk based capital adequacy framework include:¹⁷ i) Its constraint of the build-up of leverage in the banking sector – which the risk based regime is not equipped to address; ii) Through a non-risk based „backstop“ which ultimately serves to protect against model risk, and the reduction of capital requirements, its reinforcement of risk based requirements; iii) Its role as a standardized measure that investors and counterparties can use in making comparisons between banks over a period of time; iv) The establishment by certain academics that the leverage ratio is a „statistically significant“ predictor of potential bank failures.

Hence it can be illustrated that the Basel III Leverage ratio not only serves as a supplementary measure to the risk based capital adequacy framework, but also a means whereby the facilitation of greater comparability between banks can be achieved (since standardization promotes consistency, enhanced transparency and disclosure). Its vital role as a supplementary tool to the risk based capital adequacy framework in countering risk taking incentives is hence illustrated.

¹⁴ Principles for Sound Liquidity Risk Management and Supervision Sept 2008 at page 1
<<http://www.bis.org/publ/bcbs144.htm>>

¹⁵ See RM Lastra and G Wood, „The Crisis of 2007 – 09: Nature, Causes and Reactions“ Journal of International Economic Law 13(3) at pages 531 and 532

¹⁶ *ibid*

¹⁷ Basel Committee on Banking Supervision, Discussion Paper 'The Regulatory Framework: Balancing Risk Sensitivity, Simplicity and Comparability' July 2013 Bank for International Settlements Publications at page 16

BII The Relationship Between Basel III and the Capital Requirements Directive IV

The legislative package for the CRD IV was adopted by the European Parliament and the EU Commission in April 2013, with the CRD IV changes being grouped into two areas:¹⁸

- capital reform
- liquidity standards

“The enhanced Basel II Framework (which includes reforms aimed at increasing the quantity of capital - as well as improving the quality of capital), and the macroprudential overlay (together), are referred to as Basel III.”

Under Basel II, the Tier One Capital ratio which banks were required to retain was 4%. Under Basel III, this has been raised to 6%.

Further, whilst Basel II stipulated a Core Tier One capital ratio of 2%, this has been increased to 4.5% under Basel III and comprises of common equity before deductions.

In respect of the capital conservation buffer, Basel III regulations require that banks retain a capital conservation buffer of 2.5% - bringing total common equity requirements to 7%.

In respect of the countercyclical buffer, Basel III regulations stipulate a requirement within a range of 0% and 2.5% of “common equity or other fully absorbing capital” to be implemented according to national circumstances.

Both the capital conservation and counter cyclical buffers did not exist under Basel II.

Under Basel III, additional capital requirements have also been stipulated for systemically relevant financial institutions.

The CRD IV is also aimed at:¹⁹

- Increasing the quality of eligible capital
- Increasing the quantity of capital held by establishing significantly higher minimum capital ratios and reducing pro cyclicalities through the introduction of the new capital buffers
- Increasing the capital requirements for Counterparty Credit Risk - including a new capital charge for potential mark-to-market losses on OTC derivatives
- Introduction of a non risk based leverage ratio to safeguard build-up of leverage in the system

¹⁸ See KPMG, “CRD IV: Single Rule Book for EU Banking Regulation Changes and Implications” May 2013

¹⁹ see ibid

Key CRD IV provisions in relation to increased quality of capital, include the following:²⁰

- Common equity Tier One becomes the primary measure of capital adequacy
- Basel II deductions are applied in full to common equity Tier One rather than 50:50
- Exclusion of hybrid instruments from common equity Tier One (with stricter criteria for inclusion of instruments in additional Tier One)
- Harmonised and stricter requirements for Tier 2
- Tier 3 capital no longer eligible

Key CRD IV provisions in relation to increased quantity of capital, include the following:²¹

- Minimum common equity Tier One ratio of 4.5% (excluding buffers)
- Minimum Tier One ratio of 6% (excluding buffers)
- Minimum total capital of 8% (excluding buffers)
- Introduction of three capital buffers: namely, the capital conservation buffer, counter-cyclical buffer and the systemic buffer

The significance of the CRD IV in implementing Basel III lies in the fact that Basel III will become more directly binding and enforceable in EU member states. This differs significantly from the previous situation with Basel II, not just because two directives (Directives 2006/48 and 2006/49), existed then, but because of the European Banking Authority's new mandate (as will be illustrated in the conclusive section of this paper), in generating Binding Technical Standards (BTS). BTS are to be adopted by the European Commission by means of Regulations or Decisions - regulations being binding and directly applicable in member states, according to EU Law.

BIII Theoretical and Empirical Based Research: Which is More Important?

"Scholars must do more to develop explicit theoretical arguments and ensure that their methods match their underlying assumptions about causality ontology and epistemology."²²

Theories therefore, constitute the backbone and framework on which successful empirical based research is generated.

Conversely, Mitchell argues that:

²⁰ *ibid*

²¹ *ibid*

²² AR Poteete, M Janssen and E Ostrom *Working Together: Collective Action, the Commons and Multiple Methods in Practice* 2010 Princeton University Press at page 14

- Legal theory and policy should be informed by sound empirical research - but that the limits of an empirical approach should be acknowledged and addressed.²³

Mitchell is also highlighted as consolidating on the argument that “behavioural law and economics should be focussed on seeking solutions to specific problems rather than attempting to formulate a general model of behaviour to compete with law and economics rational actor model.”²⁴

However, this is precisely the criticism that has arisen in relation to the application of empirical based research. How applicable are their results to similar future occurrences? If such results cannot be applied generally, then to what extent should they be relied upon to accurately predict future occurrences?

His argument for the response to individual specific and unique incidences is however more convincing:

- If Enron is an aberration or the product of unique forces unlikely to be seen again, then why bother with sweeping legal reforms and why not focus on criminal punishment, civil liability and reparations for the players in the Enron case alone?”

His remarks could also be addressed if a generally applicable solution to past, present and future crises could be found. Then this would justify the major and “sweeping legal reforms” as well as costs, time and efforts undertaken to ensure that such past failures are avoided in the future. Whilst it is technically and physically not feasible to derive a solution for every unique and specific occurrence, owing to time and costs involved, a generally applicable solution, better provided by theories, in dealing with root causes of the issues at hand, would serve as a benchmark whereby future crises resulting from similar past errors or failures, could be averted.

D’Ippolito argues that “a unified body of knowledge and theory about designing and design has not yet emerged” and in so doing makes reference to Love²⁵ who argues that it would generate adverse consequences, namely: theoretical conflicts between researchers especially those working in different domains; difficulties in validating theories against their ontological, epistemological and theoretical contexts, a lack of clarity about the scope, bounds and foci of fields of research and theory - making about designing and designs.

Poteete et al²⁶ also add that the latest techniques are sometimes adopted with little reference to theoretical considerations or understanding of the underlying assumptions - and that however, methodological sophistication cannot substitute for theory. In so doing, reference is also made to Achen²⁷ who warns that “quantitative analyses which are not supported by theoretical micro foundation considerations or careful exploration of the data”, would generate unreliable results which can not be trusted.

²³ See G Mitchell, “The Promise and Limitations of An Empirical Approach to Law” at page 29

²⁴ see *ibid* at page 32

²⁵ Love (2002); See B D’Ippolito “An Exploratory Review of the Design Literature: Gaps and Avenues For Future Research” June 2012 Manchester Business School Working Paper, Number 628, available: <http://www.mbs.ac.uk/cgi/apps/research/working-papers/> at page 7

²⁶ AR Poteete, M Janssen and E Ostrom *Working Together: Collective Action, the Commons and Multiple Methods in Practice* 2010 Princeton University Press at page 12

²⁷ (2002,2005) see *ibid*

Emphasis is also directed at the fact that “design science, along with natural science, are important to ensure that research on information technologies, is both relevant and effective.”²⁸ Furthermore, products of design science are considered to be four types, namely:²⁹

- constructs
- models
- methods; and
- implementation

The above is also applicable to other fields of discipline - and particularly the social sciences where the structure of the design, as well as model specification of the variables to be incorporated into the study, are crucial to the success and implementation of the design.

C Theoretical Considerations: Methodology and the Design of the Study

Limitations of Empirical Based Research

In order for empirical based research to generate meaningful and credible results, a theoretical framework which serves not just as complement, but which also constitutes the backbone of the research is essential. For this reason, a review of the literature to which contribution of knowledge is to be made, should ideally, comprise of three sections, namely the conceptual framework, the theoretical framework and the empirical framework.

As a result, empirical based research is limited severely in its reasoning and arguments where an absence of a theoretical based framework for the study, which constitutes the focal point of investigation, exists. Whether a theoretical based research provides more credibility than an empirical based one, has constituted the focus of many contentious debates. One common theme resonating however from these debates, relates to the vital role of theories in explaining “causality effects” of the research problem being addressed. And whilst more credibility would be generated where a theoretical based research is consolidated with empirical based investigations, the results of an empirical based research cannot be applied as generally, in addressing the cause of the problem - but rather, has more individual and duration specific based application.

Empirical based research, for this reason, is limited by time lagged factors, the incorporation of specific and relevant variables, which may or may not be relevant to and at, a specific or particular period. Further, the design of empirical based research which not only incorporates the model specification (which should constitute the framework of the empirical aspect of the study), but also the methodology to be used, is of vital and crucial importance.

²⁸ March and Smith (1995); see B D’Ippolito “An Exploratory Review of the Design Literature: Gaps and Avenues For Future Research” June 2012 at page 8

²⁹ see *ibid*

As well as design and methodology also being considered to be a means of attaining and performing goal oriented activities. a further, the major function of design is considered to be “the creation of models, methods and implementations which are innovative and valuable”.³⁰

The theoretical based framework should influence the design of the empirical study to be undertaken

Empirical study

Stage One: Model specification - which determines the inputs, namely the variables (dependent and independent variables) to be incorporated

Stage Two: Methodology - which involves the implementation of the design which incorporates the inputs/variables to be used in the study

Stage Three: Generating the results and products after having implemented the design

Stage Four: Interpreting the results of the investigation

Stage One -----> Stage Four represents the decreasing order of importance since the success of the outcome of the investigation is wholly and entirely dependent on stage one - even though other stages are also still important.

Hence the significance of theories and their role in contributing to the success of empirical based research.

CII Growing Importance of Macro Economic Perspectives

“Taming the Tiger of Banking and Finance”: Dealing with the Root Causes

“First and foremost, this is a crisis of economics and particularly of conventional macroeconomics. The discussion of the shocks..... demonstrates quite clearly that the waves of huge crises which hit the high-income economies was not a result of events outside the economic system, such as an unexpected war or a vast natural disaster.....

Secondly, this has been a crisis of the financial system. Naturally and inevitably, efforts have been made to tighten up regulation and improve the resilience of the system. These efforts are not insignificant. But in

³⁰ B D’Ippolito “An Exploratory Review of the Design Literature: Gaps and Avenues For Future Research” June 2012 at page 8

essence, they are conservative: an attempt to preserve the essence of a system that we already know is extremely fragile.....”³¹

As illustrated under the literature review section, the devastating effects of liquidity risks, as well as excessive deleveraging processes, contributed to the introduction of liquidity standards, as well as the leverage ratio, under Basel III reforms.

Whilst it cannot be disputed that considerable efforts are being undertaken to deal with root causes of the most recent Crisis, through the introduction of these liquidity standards and the leverage ratio, a greater concern relates to the Basel III leverage ratio. The ensuing section, section D, will elaborate on these concerns - which principally revolve round its effectiveness as a performance measure. Another concern relates to the macro economic perspective of addressing the Crisis which has increasingly been accredited with greater focus. From these perspectives it could be questioned whether the root causes of the recent Crisis are being effectively dealt with or whether such problems are only being aggravated as a result of the introduction of the Basel leverage ratio or an increasingly macroeconomic based inclination.

In his article,³² Boettke illustrates how “new economics of Keynes moved away from the methodological individualist position and questioned the self regulatory robustness of the market economy.” He further adds that instead of reliance on market forces to self- correct for errors in investment, the government was given the policy role of correcting for market instability and that in addition to this Keynesian revolution in macro economics, economists started to develop arguments about the micro economic efficiency of the market economy - with theories of imperfect competition and monopolistic competition being developed during the 1930s.

The shortcomings of macro economics, the reliability of macro economic indicators have been brought to light following the recent Financial Crisis. Furthermore, the extent of government intervention in regulation is very evident as revealed through the G20 gathering of member states which promulgated the introduction of Basel III measures. To what extent should judiciary, legislature or the executive intervene in regulatory standard setting? Will the Basel III’s more macro economic focus resolve issues which are attributed to monetary and fiscal shortcomings? From this perspective, those discussions relating to monetary policy, which have considered problems of addressing challenges presented by inflexible wages are also relevant. This is also relevant to the present crises encountered by the Eurozone in respect of German wage flexibility and lack of competitiveness in the rest of the Eurozone.³³

Even though micro economic theory has lost much of its relevance over the years, as rightly highlighted,

- the analysis of fine details of the economy’s structure, can teach one to understand such vital issues as the role of competition.”³⁴

³¹ See prologue, M Wolf, *The Shifts and the Shocks: What We’ve Learned - and Have Still to Learn*” 2014 Penguin Press New York

³² See P Boettke, “Information and Knowledge: Austrian Economics in Search of Its Uniqueness” *The Review of Austrian Economics*, 15:4, 263–274, 2002 Kluwer Academic Publishers at page 264

³³ For further information on this see A Review, by Kenneth Rogoff, Harvard University Prospect Magazine, August 20, 2014

³⁴ See F Hayek, “Competition as A Discovery Procedure” *THE QUARTERLY JOURNAL OF AUSTRIAN ECONOMICS* VOL. 5, NO. 3 (SUMMER 2002) page 10

In addressing more effectively, fiscal and monetary policy issues, there is need for greater focus on the underlying basis of these issues which could be provided through greater research on micro economic theories and an appreciation of the answers which could be provided through greater exploration of these theories.

D The Need For Supplementary and Enhanced Supplementary Leverage Ratios: Improving the Performance Measure Attributes of the Leverage Ratio

Efforts Aimed at Reducing the Potential For Regulatory Capital Arbitrage Practices

The leverage ratio can be defined as the capital measure divided by the exposure measure of a bank's assets. More specifically, the Basel III Leverage Ratio is defined as the Capital Measure (the numerator) divided by the Exposure Measure (the denominator), with this ratio expressed as a percentage and with the basis of calculation being the average of the three month-end leverage ratios over a quarter.³⁵

Components of the Exposure Measure

A bank's exposure measure is considered to be the sum of the following:

- On balance sheet exposures
- Derivative exposures
- Securities Financing Transaction Exposures
- Off balance sheet (OBS) items

According to the most recent, updated Standard on leverage ratios (hereinafter referred to as "the Final Standard"), issued by the Basel Committee on Banking Supervision in January 2014,³⁶ the exposure measure for the leverage ratio, should generally, follow the accounting value, subject to the following:

- On-balance sheet, non derivative exposures are included in the exposure measure net of specific provisions or accounting valuation adjustments;
- Netting of loans and deposits is NOT allowed.

³⁵ Basel Committee on Banking Supervision, Consultative Document Revised Basel III Leverage Ratio Framework and Disclosure Requirements at page 5 of 22 <http://www.bis.org/publ/bcbs251.pdf>

³⁶ Basel Committee on Banking Supervision, "Basel III Leverage Ratio Framework and Disclosure Requirements" January 2014 Bank for International Settlements Publications, see paragraph 12. It is however contended that this version is a "near final version".

As well as disallowing the “netting” of loans and deposits, the January 2014 final standard³⁷ on leverage ratios, as issued by the Basel Committee on Banking Supervision, in compliance with the June revision, also provides under paragraph 30 that, in order to capture the credit exposure to the underlying reference entity, in addition to the prescribed CCR treatment for derivatives and related collateral, the effective notional amount referenced by a written credit derivative is to be included in the exposure measure.

However, in contrast to its predecessor, which highlighted under paragraph 27 that:

- collateral received in connection with derivative contracts does not reduce the economic leverage inherent in a bank’s derivatives position. In particular, the exposure arising from the contract underlying is not reduced. As such, collateral received (cash or non-cash) may not be netted against derivatives exposures whether or not netting is permitted under the bank’s operative accounting or risk-based framework

the Final Standard, paragraph 23 projects a more lenient and cautious tone in its approach to netting:

- collateral received in connection with derivative contracts does not necessarily reduce the leverage inherent in a bank’s derivatives position, which is generally the case if the settlement exposure arising from the underlying derivative contract is not reduced. As a general rule, collateral received may not be netted against derivative exposures whether or not netting is permitted under the bank’s operative accounting or risk-based framework. Hence, when calculating the exposure amount by applying paragraphs 19 to 21 above, a bank must not reduce the exposure amount by any collateral received from the counterparty.

Furthermore, extended provisions have been included to permit certain netting transactions between counterparties – to the extent that certain provisions and conditions stipulated in the Final Standard are met.

As a means of ensuring consistency, comparability and accuracy in its calculations and measurements, the same coverage as that adopted for regulatory consolidation – as used within the risk-based capital framework, is applied by the Basel III leverage ratio framework.

In contrast to many other jurisdictions, the U.S has introduced proposals aimed at enhancing the Basel III leverage ratios, (the recently revised Supplementary Leverage ratios), as well as the Dodd Frank Leverage Ratio.³⁸ Recommendations for enhanced leverage ratio requirements, “to apply to UK global systematically important banks, and other major domestic UK banks and building societies”, have also been introduced by the Financial Policy Committee of the Bank of England.³⁹

Recent proposals aimed at enhancing the Basel III leverage ratios in the U.S would result in an increase to 5 percent of assets for parent companies and 6 percent for their banking subsidiaries under a proposal which will

³⁷ Basel Committee on Banking Supervision, “Basel III Leverage Ratio Framework and Disclosure Requirements” January 2014 Bank for International Settlements Publications

³⁸ “Dodd Frank section 165 compels foreign banks to comply with banking rules. Whereas eight of the largest U.S banks meet the 3% ratio, many foreign banks are permitted to meet the 4% ratio”. See S Skym, “New Regulation and the Repo Market: Leverage Ratios” <http://scottskym.com/2014/03/new-regulation-and-the-repo-market-leverage-ratios/>

³⁹ See Shearman & Sterling LLP, “Enhanced Leverage Ratios for UK Financial Institutions” December 2014 at page 1 <http://www.shearman.com/~media/Files/NewsInsights/Publications/2014/12/Enhanced-Leverage-Ratios-for-UK-Financial-Institutions-FIA-120114.pdf>

affect the eight globally systemically important banks in the U.S. In November 2012, the FSB and BCBS published a list of banks that meet the Basel Committee for Banking Supervision definition of a G-SIB based on year-end 2011 data. The eight globally systemically important banks in the U.S, identified as G-SIBs by the Financial Stability Board, are: Bank of America Corporation, The Bank of New York Mellon Corporation, Citigroup Inc., Goldman Sachs Group, Inc., JP Morgan Chase & Co., Morgan Stanley, State Street Corporation and Wells Fargo & Company.⁴⁰

The Issue of Calibration: The Risk Based Capital Framework and Basel III leverage Ratio

The introduction of supplementary leverage ratios and enhanced supplementary leverage ratios in several jurisdictions, is attributed to reasons which relate to the growing realisation that the risk based capital adequacy framework is not adequately calibrated with the Basel leverage framework, as well as the need to avoid scenarios whereby undercapitalisation of banking institutions, as well as non financial institutions could occur.

In addition to the issue of calibration between the risk based capital adequacy framework and the Basel leverage framework, another potential source of undercapitalisation of financial and non financial institution relates to the use of credit conversion factors.

The use of CCFs, as finalised by the Basel Committee's January 2014 Final Standard, has been considered inappropriate since it applies risk weighting factors to a non risk based leverage framework and further it is argued, that the reduction of exposures through CCFs to as little as 10%, could result in the undercapitalisation of banks.

The Introduction of Supplementary and Enhanced Supplementary Leverage Ratios in the UK and the US

Another justification and plausible explanation relating to why certain jurisdictions, such as the United Kingdom, may have considered the need to introduce supplementary ratios - may also be intrinsically linked to the rationale provided by United States regulators to introduce not only supplementary leverage ratios, as regards the eight globally systemically important banks (G-SIBs),⁴¹ but also enhanced supplementary leverage ratios - the need to avert possible undercapitalisation which could result to serious distortions within the financial system as a whole - given the systemic relevance of such banks.

⁴⁰ See Financial Stability Board, Update of Group of Global Systemically Important Banks (G-SIBs) (Nov. 1, 2012) http://www.financialstabilityboard.org/publications/r_121031ac.pdf

⁴¹ The eight globally systemically important banks in the U.S, identified as G-SIBs by the Financial Stability Board, are: Bank of America Corporation, The Bank of New York Mellon Corporation, Citigroup Inc., Goldman Sachs Group, Inc., JP Morgan Chase & Co., Morgan Stanley, State Street Corporation and Wells Fargo & Company. See Financial Stability Board, Update of Group of Global Systemically Important Banks (G-SIBs) (Nov. 1, 2012) http://www.financialstabilityboard.org/publications/r_121031ac.pdf

According to the Bank of England's recent report on the Financial Policy Committee (FPC)'s Review of the Basel Leverage Ratio,⁴²

- In order to maintain the relationship between the risk-weighted capital ratio and leverage ratio regimes, the FPC is requesting a direction power over a supplementary leverage ratio buffer for these systemically important firms. This power would also enable the FPC to advance its 'too big to fail' objective.

The extent to which differences in Basel leverage ratio measurements persist, or the variations in the modes of adoption and implementation, is not only reflected and evidential from several jurisdictions, which have introduced enhanced supplementary leverage ratios, but also within the EU, in relation to the Capital Requirements Directive/Regulation IV⁴³ - where based on evidence from latest proposals and negotiations, as well as the discussions which have been highlighted under this study, "EU member states will assume greater independence in their ability to increase capital requirements". The rationale and concerns resulting in the adoption of enhanced supplementary leverage ratios, as well as Binding Technical Standards, are well-founded. Further, even in jurisdictions where enhanced supplementary leverage ratios have not been introduced, concerns still linger over regulatory and accounting policy applications and implications. Disclosure measures,⁴⁴ as well as enforcement measures aimed at facilitating improved consistency, comparability and objectivity, however should serve to counter concerns relating to the extent to which such a performance measure should be relied upon.

⁴² See Bank of England, "Financial Policy Committee's Review of the Leverage Ratio October 2014 at page 16
 "The Financial Policy Committee of the Bank of England issued recommendations for enhanced leverage ratio requirements to apply to UK global systemically important banks, and other major domestic UK banks and building societies." See Shearman & Sterling LLP, "Enhanced Leverage Ratios for UK Financial Institutions" December 2014 at page 1
<http://www.shearman.com/~media/Files/NewsInsights/Publications/2014/12/Enhanced-Leverage-Ratios-for-UK-Financial-Institutions-FIA-120114.pdf>

⁴³ See JP Morgan, 'Basel III Implementation: Is the Industry Running Out of Time?'

http://www.jpmorgan.com/tss/General/Basel_III_implementation_Is_the_industry_running_out_of_time_/1320504512062

⁴⁴ See Basel Committee on Banking Supervision, Basel III Leverage Framework and Disclosure Requirements, January 2014, Bank for International Settlements Publications) <http://www.bis.org/publ/bcbs270.pdf>

E. Conclusion:

As well as facilitating enhanced requirements for the quantity and quality of capital, serving as a basis for new liquidity and leverage requirements, providing new rules for counterparty risk and new macro prudential standards, the CRD IV also introduces changes to rules on corporate governance (including remuneration), as well as introducing standardised EU regulatory reporting (COREP and FINREP).⁴⁵

Potential Basel III implementation issues for the Eurozone and European banks relate to increased cost of capital for banks, restrictions on distribution of earnings and dividends.

However in relation to potential enforcement and compliance issues, the role assumed by the European Banking Authority, as well as tools being incorporated to ensure such enforcement and compliance, should serve to facilitate the implementation process - further improving convergence and harmonisation across the EU.

The European Banking Authority (EBA) is now empowered to generate a number of Binding Technical Standards (BTS), guidelines, and reports for the implementation of the CRD IV package.

- BTS are legal acts which specify particular aspects of an EU legislative text (Directive or Regulation) and aim to ensure that consistent harmonisation is achieved in specific areas.”⁴⁶

Guidelines are also illustrated by the EBA as being “important tools for fostering convergence of supervisory practices across the EU.” According to the EBA, although guidelines are not legally binding, supervisory authorities and institutions around Europe must make every effort to comply with them. Further the EBA adds that supervisory authorities are particularly obliged to inform the EBA of their compliance or intention to comply with them and also to explain their reasons for eventual non compliance.

Despite the merits of improved consistency and harmonisation in the implementation of Basel rules and regulations – such merits including enhanced facilitation of disclosure and transparency, a balance also needs to be struck between the need to avoid a „one size fits all“ situation whereby the needs of respective jurisdictions are not met.

The need to achieve more relevant and accurate results is evidenced by the evolution of the Basel capital accords from the rather „crude“ original 1988 Capital Accord (which even though risk based, focussed exclusively on credit risk and did not apply risk weights in a specific and tailor made manner to asset classes) to the adoption of more tailor made and specific internal ratings models.

⁴⁵ See KPMG, “CRD IV: Single Rule Book For EU Banking Regulation Changes and Implications” May 2013 at page 8

⁴⁶ European Banking Authority, Implementing Basel III Europe: CRD IV Package
<http://www.eba.europa.eu/regulation-and-policy/implementing-basel-iii-europe>

Whilst comparability and consistency, which is sometimes attributed to simpler and cruder models, may be desired, it is also vital that results derived from such models reflect the reality and accuracy of prevailing conditions – hence the need to provide for models which provide and generate credible results.

As identified by the Basel Committee on Banking Supervision in its discussion paper „The Regulatory Framework: Balancing Risk Sensitivity, Simplicity and Comparability“,⁴⁷ the disadvantages attributed to undue complexity and reduced comparability in the capital framework, potentially“ include:

- Increased difficulties for bank management in understanding the regulatory regime;
- The challenges arising in capital planning;
- Less accurate risk assessments;
- The creation of regulatory gaps and opportunities for arbitrage;
- An undermining of the ability of supervisors to effectively assess the capital adequacy of banks
- Impediments presented to the effective review of the capital management process by supervisors.

Empirical based research should serve to consolidate theoretical based research. However its limitations should also be acknowledged and hence it should assume such a complementary function where this is applicable and feasible. For instance, as highlighted by van Harten,⁴⁸ given the inability of empirical research to demonstrate the presence or absence of actual bias, at systemic level, institutional safeguards should be in place or better still, consolidated. Within the context of leverage ratios, performance should therefore be measured, having due considerations to the need for calibration with the risk based capital adequacy framework, as well as the incorporation of thorough and frequent disclosure practices, as prescribed by standard setters, in order to ensure the facilitation of not just transparency, but also comparability, consistency and objectivity in relation to such a performance measure.

In addressing more effectively, fiscal and monetary policy issues, as well as mitigate the limitations of empirical based research, there is need for greater focus on the underlying basis of these issues which could be provided through greater research on micro economic theories and an appreciation of the answers which could be provided through greater exploration of these theories.

⁴⁷ Basel Committee on Banking Supervision, Discussion Paper 'The Regulatory Framework: Balancing Risk Sensitivity, Simplicity and Comparability' July 2013 Bank for International Settlements Publications
at page 12

⁴⁸ G Van Harten, Contributions and Limitations of Empirical Research on Independence and Impartiality in International Investment Arbitration Oñati Socio-Legal Series, v. 1, n. 4 (2011) ISSN: 2079-5971

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